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CONTENTS.

LECTURES.

The Relative Frequency of Disease between the Right and Left Sides of the Heart; Degeneration of the Heart; its Causes and Means of Avoidance. By CORNELIUS BLACK, M.D. (Continued from p. 87.)

The Treatment of the Different Forms of Heart Disease already Considered. — The particular diseases of the heart which have already been considered may come under the care of the medical attendant at any stage of their course. When the disease is limited to the left side of the heart, the case may chance to fall under the care of a physician immediately after recovery from an attack of rheumatic endocarditis. If so, the heart's action will invariably be found to be quick, irritable, and remarkably impressible to the slightest excitant. Even under perfect repose it is quicker than natural. Under the least exciting cause, whether mental or physical, the rapidity of the heart's contractions is far greater than the cause itself could possibly produce under ordinary circumstances. There are three reasons for this rapid action of the heart. The first is, the more than ordinary quantity of uric acid yet remaining in the blood; the second, the hyper-sensibility of the endocardium produced by the inflammation through which it has recently passed; and the third, the general debility arising out of the previous attack.

The explosion of acute rheumatism in the joints and in the heart has carried off the great bulk of the uric acid, but it has

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not entirely cleansed the blood of this morbid element. Sufficient yet remains behind to act the part of an irritant to the hyper-sensitive structures of the heart, and in this way to maintain for a time an increased frequency of action of that organ. The first element of treatment in such a case is, to promote the elimination of uric acid from the blood, and to allay the inordinate sensibility of the endocardium.

To eliminate the yet remaining uric acid it must be combined with something which will render it very soluble, and direct it to the kidneys. The alkalies have this property, and of these potash forms the most soluble, and therefore the most suitable, salt. But potash must not be exhibited in combination with any element which, when liberated in the system, will act the part of an irritant. Iodine is both an excitant and an irritant, therefore iodide of potassium must not be given at this particular period of treatment. The potash salts to be used are the carbonate, bromide, citrate, acetate, tartrate, nitrate, and chlorate, together with the ordinary solution of potash. These salts ought not to be administered in large doses, but in doses of from five to ten grains two or three times a day. It is very probable that alkalies were freely administered during the acute attack. It may be that they were given in doses somewhat heroic, and that they have already achieved all that such doses are calculated to effect. By the time they have thus effected their object the body has been much attenuated, and the blood is greatly impoverished. This condition is at once recognized in the wasted tissues of the body, in the delicate pallor of the general surface as compared with the natural hue of health, in the faded colour of the lips, and in the pearly appearance of the scleroticæ. If, in this condition, the large doses of potash were continued, or, if not previously given, if they were now to be administered, the potash would act upon the fibrinoid and albuminoid constituents of the blood, effect their transformation into leucine and tyrosine, and thus deprive the tissues of their pabulum for growth. That which is intended for the nourishment of the body would be diverted from its original destination, and, as leucine and tyrosine, it would appear in the urine, instead of entering into the formation of the flesh and other structures. This fact, therefore, counsels the exhibition of small doses only of potash at this particular period.

When, from the fall of the pulse, it may be inferred that the excitability of the heart has subsided, and that the excess of uric acid has been eliminated from the blood, the time has arrived when iodide of potassium may, if necessary, be exhibited. The object sought to be obtained by its exhibition will be the absorption of inflammatory exudation which is already crippling, or which may hereafter cripple, the heart in the discharge of its natural duties.

To allay the hyper-sensibility of the endocardium, the most effective agent is *digitalis*. This, exhibited in doses of five or eight drops of the tincture three times a day, very soon reduces the frequency of the heart's action, and brings it within the ordinary range of health. It is important to effect this object, because excess of action would lead to one of two results —to exhaustion and dilatation of the heart, where the blood is so impoverished that it cannot furnish the necessary materials for growth; to hypertrophy, where those materials are in sufficient quantity to serve the ordinary purposes of nutrition.

As soon as the number of the heart's contractions has been reduced to that of health, the digitalis ought either to be discontinued, or to be given in smaller doses and at longer intervals. If, after the fall of the pulse to its natural standard, the digitalis were continued in the same dose and at the same intervals as before, sudden death might possibly occur. I have never seen death produced by this drug; but I have again and again observed headache, faintness, sickness, extreme pallor of the countenance, muscular tremor, and mental alarm follow its prolonged exhibition. Death, however, has been known to occur suddenly from its continued use. Death thus suddenly induced was formerly ascribed to the *cumulative effect* of digitalis in paralyzing

the muscular fibre of the heart; but it is now more generally referred to the very opposite condition of that fibre—to a clonic contraction of the left ventricle, which at once arrests the flow of blood to all parts of the body. Under either explanation the result is the same. The supply of blood to the brain is suddenly cut off; its vessels instantly push forward their blood into the venous capillaries; they then collapse; the patient dies. This emptying of the capillaries after the cessation of the heart's action is beautifully illustrated in the circulation of the newly-hatched fish. Fixed in a glass trough beneath the microscope, the failing energies of the heart may be watched until they entirely cease. For some thirty or forty seconds after the heart has ceased to beat, the capillaries can be seen contracting and pushing forward their blood into the veins until the tissues become perfectly colourless, and the vessels themselves can no longer be distinguished from the surrounding structures. Analogy teaches that what occurs in the fish occurs also in the human subject. Given, then, the arrest of the circulation at the left heart, the arterial capillaries will continue to contract until they have completely emptied themselves of their blood. Hence, after death from this drug, we should expect to find collapse of the arterial capillaries; distension of the venous capillaries of the general system and of the lungs; distension of both auricles, but not of both ventricles, if it is true that death begins here by clonic contraction; but if such is not the case—if death is owing to paralysis of the heart—then we should expect both ventricles also to contain more or less blood, as is invariably the case in the single ventricle of the fish when it dies by asthenia under the microscope.

I am not prepared to assert positively which of these two explanations of the mode in which digitalis kills is the correct one; but the extreme pallor of the countenance, the small feeble pulse, the faintness, the giddiness, the nausea, the sense of extreme debility, the muscular tremors, and the apprehension of mind, which occasionally supervene on the continued use of this drug, are certainly more indicative of a paralyzing tendency than of a tendency to clonic contraction.

If the view that digitalis kills by paralysis of the heart is correct, how then, it will be asked, does it regulate the action of the heart by substituting *forcible* contractions for *feeble* ones—how, in short, does it convert a feeble action of the heart into a healthy contraction? The answer is, that digitalis acts by diminishing the sensibility of the nerves of the heart; that it, in consequence, reduces the number of the heart's contractions within a given time, and that it thereby gives the heart more rest, which is equivalent to power, because by rest comes refreshment, a renewal of energy, an increased capability for the manifestation of muscular force. In organic disease of that organ requiring treatment, there is always a hyper-sensibility of its nerves, and, consequently, an increased frequency of action. Digitalis is given; this hyper-sensibility is diminished; the heart is rendered less sensible of the presence of blood in its cavities; it contracts less frequently in consequence. Continue the digitalis, and you continue to diminish the sensibility of the heart; you at length abolish its sensibility entirely; and the heart, failing in consequence to recognize the presence of blood in its chambers, ceases to contract, and the patient dies. The heart may be slept to death by digitalis, as the brain and nervous system may be slept to death by opium. I must, for these reasons, confess that the old view of the action of digitalis upon the heart, finds more favour with me than does the more recent view of its action. Hence my belief is, that when digitalis kills, it kills by paralysis of the heart, and not by exciting a contraction of the ventricles which knows no relaxation except in death.

In all affections of the endocardium of the left side of the heart arising out of inflammation, digitalis will be found a valuable remedy at some period of their course. In such cases its use is specially indicated when the heart's action is quicker than natural. This statement is made despite the doctrine which forbids the employment of digitalis where the

aortic valves are incompetent. The reason assigned for the objection to its use in this valvular lesion is, that digitalis, by deadening the sensibility of the left ventricle, might cause the latter not to take cognizance of the falling back of the blood from the aorta into its cavity sufficiently quickly to prevent itself from being overwhelmed by the reflux of blood, and the vessels of the brain from being deprived of the necessary quantity of blood to maintain the functions of the nervous system. In other words, the left ventricle might be taken by surprise, and might be overwhelmed by the falling column of blood through the aortic valves, and the supply of blood to the brain might in consequence be suddenly cut off. When the action of the heart is quicker than natural, there is no danger whatever of this occurrence from the exhibition of digitalis in this incompetent condition of the aortic valves. The safe rule to be observed, both for its employment and for its discontinuance, is to give it when the heart's action is increased in frequency, to withdraw it when that action has become natural. If it were continued after the heart's action has been reduced to its natural condition, the sensibility of the endocardium might become too much deadened to take proper cognizance of the presence of blood in the ventricle, and the evil in question might then arise. Employed, however, under the precautions which I have named, digitalis may be given in aortic valvular incompetency with as much benefit and as much safety as in any other lesion of the heart.

To aid the means already stated for reducing the increased action of the heart, the general debility caused by the acute rheumatism will require consideration in the treatment. As the power of the body is wasted by disease, the nervous system becomes more excitable, quicker to receive an impression, quicker to reflect it. The power to accomplish is not equal to the excitement to act, irritability exceeds contractility; the heart, therefore, puts on increased frequency of action to compensate for the want of power. To meet this necessity, a judicious use of tonics, good food, free ventilation, and passive exercise in the open air are required.

It will often happen to those who are accustomed to treat heart disease to be called to a case like the following: The patient, between forty and sixty years of age, suffered in early life from rheumatic endocarditis, and has now suffered for some time from mitral and tricuspid incompetency, with hypertrophy of the ventricles. Upon this condition of the heart general dropsy has supervened within the last three or four days. The skin is somewhat hot and dry; the face red or bluish-red, and bloated; the eyes are more or less injected and partially suffused with tears; the lips, tongue, and buccal membrane blue; the breathing is quickened, lifting, and wheezing, and there is cough, with, perhaps, a very scanty expectoration of frothy mucus. The heart's action is hurried, irregular, unequal, and laboured, now manifested by two or three rapid contractions, brought up by a distinct jog, followed by a pause; next by two or three rhythmical contractions, followed by a distinct intermission; then by a repetition of the quick, short, irregular contractions—jog—pause! In addition to the auscultatory signs of diseased and incompetent mitral and tricuspid valves, there are epigastric pulsation and regurgitation into the external jugulars. These veins, full, tense, and throbbing, stand forth like prominent cords; between them other veins equally tense, tortuous, and distended with black blood, wind their course, whilst a sinuous interlacement of enlarged veins overspreads the upper and front part of the chest. The appetite is poor, there is some thirst, the bowels are inactive, and the urine is scanty, high-coloured, and without sediment on cooling. A few days ago there were the physical signs of valvular disease, enlarged heart, but no dropsy. To-day there are the same signs, but with anasarca, bronchitis, and general pyrexia superadded. Now, what has produced this change, and how is the case to be treated?

The aggravation of the old-standing physical signs and the superaddition of the other symptoms are entirely the result

of cold. The surface of the body received a chill; the blood was driven inwards from the superficial vessels; the balance of the circulation between the skin and the internal organs was in consequence destroyed; the vessels of the former contained a diminished quantity, the vessels of the latter an increased quantity of blood; the function of each was either entirely or partially arrested, the skin from lack of blood ceased to perspire, the internal organs from excess of blood could no longer secrete; the *débris* of tissue-waste, the elements of secretion and excretion, were retained in the blood; by it they were borne as irritants to the heart and nervous centres; both were thereby excited; the heart was thus roused to increased energy; it answered the stimulus conveyed to it; it threw back the blood with increased force to the vessels of the skin; they in turn became distended; the skin became hot; inflammatory fever was established.

A poisoned condition of the blood is the pathological cause of all this increased disturbance. It is very probable indeed that a poisoned condition of the blood is the pathological cause of all true pyrexia and of other diseases. But what is the proper treatment of the original affection of the heart, with this bronchitis, anasarca, and pyrexia superadded? To restore the natural secretions, and to eliminate from the blood the accumulated morbid matter of the excretions. How are these objects to be obtained? By restoring the natural balance of the circulation throughout the body. This done, every secretion will go on as before; the process of excretion will be re-established; harmony of function will be restored; the bronchitis will subside; the anasarca will disappear; the pyrexia will vanish. The balance of the circulation cannot be restored without some drain from the blood, either as blood withdrawn from the vessels, or in the form of an increased secretion from one or more organs. In this particular instance, the turgid jugulars—the tossing, tumbling, laboured action of the heart—the blueness of the lips—the bloated countenance—the oppressed breathing—mutely, but nevertheless earnestly, supplicate us to bleed. The necessity is great. We must bring to the case the quickest relief. Those swollen jugulars, tense almost to bursting, invite us to take off their pressure—their excess of blood. Withdraw ten, twelve, or sixteen ounces of blood from one of them, and mark the relief which will almost instantly follow. Improve the impression thus produced by a brisk purgative of sulphate of magnesia with digitalis, antimony, and calomel. As soon as the purgative shall have produced the desired result upon the bowels, the skin will relax, the bronchial membrane will begin to secrete, the kidneys to throw off more fluid, and the heart will become more steady, more regular, and its action less frequent. But I may be told that, in giving this combination of remedies, I am violating the rule of "elegant prescribing," which says that all the remedies prescribed ought to be directed to the attainment of one object: that a purgative ought not to be given in conjunction with a diuretic—a diuretic with a diaphoretic or an expectorant. My answer to this dogma is: that experience is a better guide than theory; that experience has taught me the value of these combinations; and that, as we are as yet totally ignorant of the nature and the determining causes of many of the subtle combinations which take place in the great laboratory of life, I shall continue to prescribe these combinations of remedies upon the single authority which experience affords. Let me be effective, let me be chemical, let me be elegant in my prescribing; but, if I cannot be all, let me be effective and chemical rather than elegant.

When, by bleeding and by the use of the purgative and other agents, the urgency of the case has been relieved, small doses of digitalis with the acetate of potash or ammonia, and ipecacuanha as an expectorant, or squills as both expectorant and diuretic, together with alterative doses of blue-pill or gray powder, will generally, in ten or fourteen days, place the patient in precisely the same condition as that in which he was before he was overtaken by cold. The anasarca, bronchitis, and pyrexia will have

disappeared; but the old-standing affection of the heart will remain. For years it had apparently become no worse. At length, however, other evils have suddenly arisen; and, although they have for the moment been removed, yet to the experienced physician they denote "the beginning of the end." The patient, although relieved of the superadditions and now able to return to his usual avocations, will not long remain free. In two or three months, or it may be in a shorter time, he returns to his medical attendant, suffering as before from bronchitis, anasarca, and concomitant pyrexia. Again he is relieved by measures similar to those employed in the previous instance, and once more he returns to his accustomed employment. Again, however, does he fail to hold his ground; and once again is he compelled to resort to his physician, who continues to relieve him as before, until disease at length defies the power of remedies, and the patient, overwhelmed by accumulated miseries, sinks into the grave.—*The Lancet*, Dec. 7, 1872.

(*To be concluded.*)

CLINICS.

CLINICAL LECTURES.

Clinical Lecture on Bed-sores.—By Sir James Paget, F.R.S., Lecturer on Clinical Surgery at St. Bartholomew's Hospital.—Bed-sores may be defined as the sloughing and mortification or death of a part produced by pressure. When we press on any part of our bodies for a moment, on the removal of the pressure the part is quite white, owing to the blood having been pressed out. The colour immediately returns, however. In bed-sores, the pressure is continual, the blood is driven away, nourishment ceases, and death of the part takes place. There are three different forerunners of bed-sores, (1) inflammation; the prominent parts, *e. g.*, the sacrum, posterior superior spine of the illium, the trochanters, and the ends of the spines of the vertebræ, are seen to be red. (2) They may be simply pale and white. (3) They may be purple or yellow from the extravasation of blood or bloody fluid. Sloughing follows these in the skin and subcutaneous tissue and fat. These latter die before the skin, sloughing proceeds faster in them, and so when the skin comes away, the place formerly occupied by these tissues is empty. Then the deeper parts die—muscles, bone, until sometimes the spinal cord itself is exposed. Now bed-sores occur in those who are absolutely at rest. If there is the slightest movement from one side to the other bed-sores may be averted. A man with simple fracture of the femur, previously healthy, can move himself slightly from side to side, and does so instinctively. No man with simple fracture of femur ought to rise from his bed with a bed-sore. It would be the consequence of gross neglect if he did. In the case of those whose lower limbs are paralyzed, there can be no motion whatever, and so they are liable to bed-sores.

The time when bed-sores begin to make their appearance is about fourteen days—that is, in the case of a healthy man who is absolutely unmoved. They will, of course, be accelerated by dirt, if his urine and fæces are not constantly removed. There are certain cases which are especially favourable for bed-sores: the old, especially those with fractured neck of femur, and those that are the fattest and heaviest, and most likely to become œdematous. Among ordinary persons, those that are the thinnest. When, as is commonly said, their bones are ready to start through their skin; the amount of tissues between the skin and projecting point of bone is so small that it soon, as it were, wears away, and bed-sores ensue. Those again in a state of fever, such as the lowest kinds of typhus, can scarcely by any means be saved from them. Their whole system is so poor and degenerated that sloughing takes place without any pressure at all; and you may see the ends of the nose, ears, etc., sloughing from the bad supply of blood. Continuous hectic fever is a state in which they appear, being an exception to the general class of consumptive patients, who, though they may lie in bed for months, rarely have bed-sores. They manage to move slightly and thus avert them. Pyæmia is another source, and is illustrated by a case in the

hospital: a man who was admitted with phlegmonous erysipelas of a limb and was treated for it. On account of some misconduct he was discharged; after a while he came back with pyæmia and an enormous bed-sore. His skin is very pallid and soft and does not properly discharge its functions, and there is every reason to believe that every other organ of his body is in a similar state. His lungs may be auscultated and his urine examined, and nothing at all found wrong with them, and yet I venture to state that neither the lungs or kidneys are performing their functions as they ought. A pyæmic subject, being so ill-nourished, is especially liable to bed-sores. Intense fever is also a productive agent. The man, whose thigh was amputated a short time since, had a most acute and intense attack of fever, and large bed-sores appeared. Now the fever is gone, the local disease is removed, and the bed-sores are healing very rapidly. The risk of bed-sores in the old with fractured neck of femur is chiefly in the first week, therefore treatment with a view to preventing them should commence immediately the patient takes to bed. After the first week the risk is not nearly so great. There is one peculiar class in which bed-sores rapidly appear, and that is rapid destruction with inflammation of spinal marrow. If in a fracture of the spine, a portion of the spinal cord, below the seat of fracture, be irritated and inflamed, sloughing will ensue in those parts to which the nerves given off below the irritated part proceed. And this will take place in two or three days. Sir B. Brodie mentions a case in which a large slough formed on the heel in twenty-four hours. No doubt there were other causes for this. Two or three days is the usual time. The same takes place in diseases of the spinal cord, especially in acute pyelitis. There is not so much risk of sloughing in parts deprived of nerve force as in parts whose nerve force is irritated and disturbed.

Now let us look at the means of preventing bed-sores, for nine-tenths of your care must be devoted to this; for if once they appear it is very difficult to get rid of them.

First of all, look to the bed. Good bed-making is an indispensable thing in the prevention of bed-sores. Several beds have been made especially for this purpose, of which the best is Dr. Arnott's. It consists of a chest full of water; on the top of this is a waterproof sheet, and over this an ordinary sheet on which the patient is laid. Here the patient is absolutely floating on water. The waterproof sheet is not drawn tight but adapts itself to every part of the patient. A patient might lie on this for years and never have a bed-sore. Inferior to this, but very good, is Hooper's bed. Here the waterproof on the bed is tight. They will avert bed-sores for a long time, but I should not like to say that a patient would never get a bed-sore on them. But you cannot have these everywhere; you can't take them about to everyone who may need them, and there are many cases in which they cannot be used at all, as in cases of fractured neck of femur, acute inflammation of knee-joint, and many others.

In ordinary beds the best thing is an ordinary firm mattress of horse-hair; and it must rest on boards. Cords are the worst possible things, as after 24 hours or so they give under the weight of the patient, and the most prominent parts are pressed upon. Iron gives after two or three weeks. Not so boards. It must be quite level. Under the horse-hair it is better if possible to have a spring or straw mattress. Feather-beds and the like are, of course, to be utterly condemned. If possible, have two beds, so that you may lift the patient into the other when it wants making. You thus avoid making beds under him.

The next thing is to harden the skin. The best application for this is a solution of one part of nitrous ether in three of water. If the back is frequently washed with this, bed-sores may be completely averted. There is in the hospital a man paralyzed in his lower limbs; he has been in this state for ten months. By the good nursing of the sister of his ward bed-sores have been kept away. This application of nitrous ether has been used: solution of one grain of perchloride of mercury, with two drachms of nitrous ether, and

six ounces of water, is another good thing. Whiskey is used in Scotland, as is brandy sometimes in England, but these are not so good. In Germany they use a solution of tannic acid. When the parts look as if they were going to slough, these spirit applications may be too strong, and then a solution of gutta percha in chloroform is very useful. Next we have to prevent pressure on those parts where bed-sores are likely to occur. These are the middle line of the sacrum, after that, in thin persons, the posterior superior spines of the ilium, and the sacro-iliac articulations, then the trochanters of the femur. The chief thing is a frequent change of posture. If a patient can lie in four different positions during the day bed-sores may be prevented. He may lie on his back, each side, and on his face. Of course, you couldn't make a stout person lie on his face; he would simply suffocate. This change prevents the gravitation of the blood. This may easily be seen by looking at the back of a subject in the post-mortem room. The back is quite red from this cause.

When patients lie on their backs they may be saved for a time by dividing a mattress and leaving a space of six inches between the halves. You may thus save the sacrum, which will have no pressure on it. The case before referred to was treated so, but sores came on the ilium and trochanters.

Large cushions made of amadou in the shape of a horse-shoe are very good. Isinglass plaster or felt water-pillows. Pads of cotton-wool may also be used with advantage. In speaking of the mode of curing bed-sores, already formed, let me remind you to continue your preventive treatment just as if there were none, lest they come in other parts.

During the sloughing there is nothing better than a poultice of equal parts of linseed and bread and enough charcoal to have a deodorizing effect. Carrot and turnip poultices are also deodorizing, but they are not so good as the first. The poultice is best spread on ordinary tow. When spread on linen, etc., folds are liable to form, and if the patient is on these they promote the bed-sore. When slough begins to separate the resin or other stimulating ointment should be spread on the surface of the poultice.

When the slough has separated the sore should be dressed with resin ointment or Peruvian balsam, or equal parts of these in the following manner: little bits of cotton-wool should be slightly spread with the ointment, and put into the sore until it is quite full. They thus make an equable soft surface for the sore. These are the chief local means for curing bed-sores. As regards internal treatment, don't stimulate. Let the diet be gentle but good; plenty of milk and bread; little or no meat, and a small quantity of wine.—*The Students' Journal*, May 10, 1873.

HOSPITAL NOTES AND GLEANINGS.

Dislocation backwards of the Hand from the Lower Ends of the Radius and Ulna.—It is, comparatively speaking, only in recent times that dislocation at the wrist-joint has been shown to be of rare occurrence. Until Pouteau, Dupuytren, and, still more recently, Colles exposed the fallacy, the cases of fracture at the lower end of the radius—the cases of so-called Colles' fracture—were always mistaken for dislocation of the hand backwards. The diagnostic points are well given in the notes supplied to us by Mr. H. Colgate, house-surgeon, who attended to the case.

George F——, aged forty-two, bricklayer, was admitted to University College Hospital on Sept. 4th, 1872. Whilst mounted on a ladder he was straining with both hands on a rope, when it broke, and he fell backwards about eighteen feet to the ground. In his fall he struck his back against a plank sloping up to the ladder. This somewhat broke his fall, and gave him a twist to the right, so that he fell first on to his right hand, which he stretched out to save himself. He was immediately picked up and brought to the hospital. When seen by the house-surgeon he seemed much shaken, but was quite sensible, and complained chiefly of the pain in his right wrist. This pre-

sented the following deformities: The hand was slightly flexed and pronated, the patient having no power over it, but supination could be performed to a slight extent. On the palmar surface, just above the hand, was a well-marked transverse groove, and above this a well-defined transverse ridge, running out on either side to the styloid processes of the radius and ulna, which were very prominent on either side anteriorly, and seemed to have approached the hand. On the dorsal aspect, opposite to the swelling in front, was a marked eminence, abrupt above, but below running in a straight line with the dorsum of the hand. The carpal bones forming the first row could be defined at the upper border of the dorsal swelling. Flexion was much impaired and caused much pain; extension was good; lateral movements were impeded and painful. Pain was felt over the most prominent parts of the swellings, front and back.

With the hand pronated the measurements from the external condyle to the styloid processes of the radius and ulna were the same as on the sound side, but from the external condyle to the head of the middle metacarpal bone there was half an inch shortening on the injured side. Between the styloid process of the radius and the head of the second metacarpal bone, and between the styloid process of the ulna and the head of the fifth metacarpal bone, there was also half an inch shortening on the injured side. There was a transverse wound in front of the wrist about an inch long, but not apparently very deep, also another slight abrasion in the palm.

Extension and counter-extension readily reduced the deformity, which did not return on taking off extension, and the man immediately felt relieved. All passive movements returned. No crepitus was felt. The wound was dressed antiseptically, and the forearm and hand were placed on a straight back splint with a pad over the carpus.

The man also had a bruise over the sacral region, and could not pass his water at the time. He however soon recovered, passing clear urine.

Sept. 9th. Visited the hospital for the first time. Wound nearly healed; wrist swelled; no discoloration; movements painful.

14th. Wound healed; wrist bandaged and splint left off.

Oct. 18th. Wrist still weak; leather gauntlet fitted.—*Lancet*, May 17, 1873.

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Cases of Wound of the Radial Artery, followed by Aneurism; Sac laid open; both ends of Vessel twisted; Rapid Recovery.—Two cases of this were treated by Mr. BRYANT, at Guy's Hospital.

CASE 1. Ann B., æt. 28, admitted September 5, 1871, having received a severe incised wound in the centre of her right forearm from falling through a skylight. Bleeding followed the accident, and pressure arrested it. On admission the next day no bleeding was present. The arm was consequently placed on a splint and kept raised. On September 10, five days after the accident, bleeding occurred; it was arrested by forcibly flexing the forearm on the arm. On the 13th an aneurism was detected in the seat of the wound. Mr. Bryant at once laid it open, and, finding the radial artery partially divided, with the orifice of the wound gaping, he divided it completely, and twisted both ends of the vessel, closing the wound. Rapid recovery followed, the woman leaving the hospital well on October 2.

CASE 2. Edward M., æt. 48, carman, admitted February 20, 1872, with an aneurism of the size of a walnut one inch above the carpus in the left wrist. He stated that four months previously he ran a knife into the part, and that blood spurted out for one hour. He went to the London Hospital, where he says the vessel was tied, and the wound sewn up. Two weeks after the injury a swelling appeared on the spot, and this steadily increased. On admission a pulsatile tumour, with a very thin wall, existed in the part indicated. By pressure it could be at once emptied, and pulsation in it could be arrested by pressure upon the brachial artery. The sac seemed disposed to burst. Mr. Bryant at once laid open the sac, turned out a well-formed laminated clot the size of a walnut, and twisted both ends of the ves-

sel. After he divided it—for he found a large gaping wound in it, the vessel having clearly been punctured—a rapid recovery followed, the man leaving the hospital in two days.—*Med. Times and Gaz.*, March 22, 1873.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Mosquito Netting as a Surgical Dressing.—In all those cases where it is desirable to keep up support and pressure, and at the same time permit the free escape of all discharges from the wound, or ulcer, or whatever it may be, the ordinary mosquito netting used for a bandage meets all the indications. Bundling dressings are avoided in this way, the parts are kept cool, the discharge goes on unrestrained, and at the same time support is maintained. If the discharge is considerable, a pad of oakum may be placed beneath the parts to secure the discharge, thus insuring perfect cleanliness. This netting serves an admirable purpose in dressing large abscesses; for instance, when compression and free discharges are to be associated.—*Med. Record*, June 15, 1872.

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Death from Chloroform.—The following case is reported in the *Am. Practitioner* for June, 1873:—

Chloroform was administered in a napkin to a youth aged 12, for the extraction of a tooth. Before coming under its influence he vomited. After nausea had subsided he was again slowly brought under the influence of chloroform, and complaining of the pain given by the extraction of one of the roots of the tooth, a little more of the anæsthetic was administered. Simultaneously with the extraction of the remainder of the tooth, the pulse flickered and a sudden pallor came over his face. All efforts at resuscitation were in vain. The amount of chloroform (Squibb's) used, including that which was inhaled prior to the vomiting, was about half an ounce. An autopsy does not appear to have been made.

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Death during Anæsthesia.—Dr. Cabot reported to the Boston Soc. for Med. Improvement (Feb. 24, 1873), a case showing what he considered the only danger in the use of ether as an anæsthetic, and a danger common to all anæsthetics.

The patient, an old man, weak, but not excessively so, had undergone an operation which lasted three-quarters of an hour. He was removed from the operating room, and the usual orders to watch him were given. Five hours afterwards he had a violent attack of dyspnœa, and died. Food was found in one of the bronchial tubes.

He also referred to a similar case which had occurred some time ago. A fat woman, while lying on her back, under ether, vomited, and some of the vomitus, getting into the trachea, killed her.—*Boston Med. and Surg. Journ.*, May 29, 1873.

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Cholera.—This pestilence is evidently making steady advances over this country. It appears to have been introduced into New Orleans about the latter part of May, by a German emigrant vessel, and after committing some ravages in that city, it advanced up the Mississippi, Ohio, and Tennessee Rivers, spreading to the towns on their banks. Memphis, Tenn., has suffered rather severely, the deaths from the epidemic in that city on the 22d of June numbering 55. We hear of it prevailing also at Nashville, Gallatin, and other towns in Tennessee. Advancing up the Ohio River, its prevalence is announced in Evansville, Indiana, Cincinnati, Ohio, and Wheeling, W. Va. From Memphis it appears to have also deflected eastward, still following, as usual, the main lines of travel. Then it is reported to have appeared in Washington, D. C., thus leaping from the valley of the Ohio to that of the Potomac, skipping over the intervening towns. These may hereafter suffer or escape entirely as has so often occurred in the history of this epidemic.

The epidemic appears from the reports received to be less fatal and to attack a smaller proportion of the population than at its previous visitations.

At the South it has been far more fatal, according to all the reports, to the coloured than to the white population.

Massachusetts Medical Society.—Expulsion of the Homœopaths.—The Massachusetts Medical Society, after a protracted investigation and patient hearing of the defendants, have expelled seven of its members for being members of an exclusive medical sect, and advertising themselves as practitioners of a special system of treatment.

We must cordially unite with the editors of our contemporary, the *Boston Medical and Surgical Journal*, in congratulating "the Society that it is in a way to be at length delivered of a source of annoyance to itself and of reproach from without."

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Notice to Subscribers.—The valuable little work of Dr. McCall Anderson on "Diseases of the Skin" having been completed in the Library Department of our June number, we now present to our subscribers the commencement of Dr. Wilson Fox's treatise on Diseases of the Stomach. Of this work, in less complete form, two editions were speedily exhausted in England; and the third, much enlarged by the author, was published but a few months since. As it thus contains the most recent information on a class of diseases of every-day occurrence, we cannot doubt that the selection will prove satisfactory to our readers.

FOREIGN INTELLIGENCE.

Treatment of Paraphimosis.—Dr. Mauriac, in an interesting monograph on Paraphimosis lately published, arrives at the following conclusions. 1. In cases of paraphimosis not complicated with simple chancres, reduction should always be attempted, whatever may be the degree and the period of the accident. 2. Division by a long median and superior incision is only indicated in cases of paraphimosis when the tightness of the constriction coincides with shortness of the prepuce. 3. When the paraphimosis is complicated with auto-inoculable chancres, any operation with a cutting instrument must be strictly avoided. If reduction be possible, it should only be performed after the virulence of the chancres has been destroyed by energetic caustics, such as the chloride of zinc. 4. Blenorrhagia, primitive syphilitic ulcerations, simple balanoposthitis, and mucous papules, do not contra-indicate either reduction or operations with a cutting instrument. 5. If adhesions, gangrene, phlegmonous inflammation of the prepuce and sheath, phlebitis, abscesses, etc., render reduction impossible, paraphimosis must be left to its natural course—always taking care, by the aid of appropriate means, to combat the complications, to hasten the resolution of the preputial swelling, and the cicatrization of the solution of continuity produced by the strangulation. 6. In irreducible paraphimosis complicated with chancres, the treatment of the former should be delayed until the cure of the latter. 7. Paraphimosis unreduced almost always leaves behind it a subpreputial tumour, constituted by hypertrophy and chronic œdema of the lower half of the prepuce. 8. This tumour must be removed by means of an inferior demi-circumcision, to complete the superior demi-circumcision produced by the ulceration of the strangulation. 9. Complete circumcision, performed behind the glans, in irreducible paraphimosis, is only applicable to cases where the prepuce is very long. It should only be done in the phase of resolution and of the ulceration of the strangulation, and if the ulceration of the strangulation has only produced an insufficient superior demi-circumcision.—*Brit. Med. Journ.*, May 24, 1873.

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Retro-uterine Hæmatocele.—Dr. F. Weber (*Berlin Klin. Wochenschrift*, No. 1, 1873) concludes, from an analysis of twenty-three cases of retro-uterine hæmatocele observed by him, that the condition occurs most frequently in hard-worked young women disposed to anæmia. In six out of the twenty-three cases immoderate sexual indulgence, partly known, partly conjectured, was the exciting cause; in four the immediate cause of the disorder. The right ovary was the source of the hemorrhage in eighteen cases. The prognosis, as regards life, he considers very favourable, as none of his cases were fatal—a result which he ascribes to his method of treatment—ice-bladder, perchloride of iron internally, and avoidance of puncture. Ten cases were completely restored; in three the broken-up extrava-

sation burst through the rectum.—*Med. Times and Gaz.*, May 31, 1873.

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Influence of various Agents on the Secretion of Bile.—At a late meeting of the Gesellschaft der Aerzte (28th March, 1873) a paper was read by Stricker, containing an account of some experiments he had made in conjunction with Dr. Röhrig on the circumstances influencing the secretion of bile. The defects of the former methods of obtaining the secretion were pointed out, and a new method suggested by which a canula was introduced into the ductus communis choledochus; from this depended a flexible caoutchouc tube, which ended in a mouthpiece that was kept constantly at the same level in a vise, thus avoiding apparent variation due to different heights of the orifice of exit. These experiments showed that all circumstances causing hyperæmia of the bloodvessels of the liver increased the secretion of bile, whilst, on the contrary, all circumstances producing anæmia caused diminution. Thus the secretion was arrested in fasting animals, whilst it augmented after food. Water introduced into the stomach or intestines caused a slight but transient increase. The introduction of purgative medicines, as croton oil, colocynth, jalap, calomel, Epsom salts, etc., materially increased the secretion of bile. It was at once stopped by ligature of the vena portæ and vena hepatica. Ligature of the hepatic vein alone materially diminished the secretion; ligature of the aorta at the diaphragm materially diminished the secretion, but did not entirely stop it; ligature below the origin of the cœliac artery augmented it; ligature of the vena cava ascendens immediately caused stoppage of the biliary secretion. All circumstances causing contraction of the vessels diminished the amount of secretion, as, for example, irritation of an exposed nerve, division of the spinal cord just below the medulla oblongata, and injection of strychnia.—*Lancet*, May 31, 1873.

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Medico-legal Importance of Intracranial Abscess.—We find in the *Medical Times and Gazette* (Feb. 15, 1873) the following instructive remarks on this subject:—

"It has been well said that no injury to the head is so trivial as to be thought lightly of, while scarcely any is so severe as to be altogether despaired of. The obscurity of the lesions produced by blows or falls upon the skull, the difficulties attending the right interpretation of the symptoms which result, the variations in the length of time after an injury when these symptoms appear, and the varied secondary ill-effects which may supervene upon the earlier and more immediate ones, are features about this class of accidents only too well known to surgeons. Many persons have received fatal injuries to the head without experiencing any, or if any, only slight inconvenience for some time, but who, after ten, twenty, or fifty days, have complained of headache and feverishness, soon to become delirious and unconscious, and ultimately comatose and dead. Many have been the cases of fracture of the skull in which no symptoms indicative of so grave a lesion have shown themselves until necrosis of the bone or intracranial inflammation, or both, have declared themselves by the fatal disturbances which they excite. Nor is it necessary, in order that these later consequences should be produced, that the skull should be fractured; the detachment of a large portion of the scalp, or the separation of the dura mater from the bone, is quite sufficient injury to be followed, after some days have passed away, with inflammation or suppuration within the cranium. Most surgical authors have recorded cases of the sort, and Mr. S. Cooper has left on record one case of lacerated wound of the scalp without injury to the bone, in which the patient went on well for seventy-seven days, but was then seized suddenly with hemiplegia, and died on the ninety-ninth day after the accident from an abscess in the substance of the brain on the side opposite the injury. In fact, it would be difficult to say what is the minimum amount of injury to the bone or soft parts which may terminate in some such result, providing proper care and rest be not insured, and if the person injured be a weakly and intemperate individual. Neither would it be easy to put a limit to the time at which, after an injury to the head,

suppuration within the cranium might commence—any more than it is to say, after it has taken place, whether the pus will be found upon the side of injury or on the opposite side, between the bone and dura mater or between the membranes, in the sulci of the convolutions or within the substance of the nervous matter itself. Certain it is that several weeks may elapse ere symptoms show themselves; and this fact is one to which that great surgeon, Pott, has especially drawn attention, as being well worthy the practitioner's constant care, lest he neglect the only opportunity and means by which his patient's safety can be secured. So, too, Astley Cooper notices especially the time when inflammation of the brain or its membranes follows upon violence. He says it is often about a week—never more; but frequently it does not come on until a fortnight or three weeks after the injury, and even more time must elapse before the person is quite safe or ought to deviate from a temperate regimen; and he refers to a case where inflammation of the brain was brought on as late as four months after a blow on the head."

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A new Substitute for Quinia.—Among the specimens of drugs exhibited in the International Exhibition in Vienna is the *Echisess scholaris*, a plant of the natural order *Apocyneæ*. It is especially abundant at Luzon, in the province of Batangar, in the Philippine Islands; and its bark has long been used by the natives, under the name of *dita*, as a remedy in all kinds of fever. Herr Gruppe, an apothecary in Manila, has found in it an uncrystallizable very hygroscopic bitter substance, to which he has given the name of *ditaïn*. The principal Spanish physician in Manila, Dr. Miguel Zina, has given it to numerous hospital patients under his care, and has found that ditaïn is not only a perfect substitute for quinia, but that its use is not followed by the disagreeable results which often attend the use of quinia. It is given in the same doses and in the same way as quinia. In many cases, also, its activity as a tonic was well marked. The ditaïn is prepared from the bark in the same way as quinia from cinchona: 100 *grammes* of bark give 2 *grammes* of ditaïn, 0.85 *gramme* of sulphate of lime, and 10 *grammes* of a perfectly inactive extractive matter. A single tree yields a large quantity of bark without injuring its growth. It is calculated that the price of ditaïn in Europe would be about 160 *francs* per kilo (3s. 6d. to 4s. per ounce). —*Brit. Med. Journ.*, June 7, 1873.

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Beef Tea.—The question as to the nutritive value of extract of meat has again been discussed by Baron Liebig, in a paper in which he carefully reviews the leading objections which have been urged against it. The veteran chemist's vindication of his opinions is of considerable interest, as he there sets forth his views on this subject shortly and precisely, and endeavours to correct the misrepresentations of the doctrine which he really teaches, and which he asserts that he taught from the beginning. He wishes it to be well understood that "he never asserted that beef tea and extract of meat contained substances necessary for the formation of albumen in the blood or muscular tissue;" and "that by the addition of extract of meat to our food, we neither economise carbon for the maintenance of the temperature nor nitrogen for the sustenance of the organs of our body; and that, therefore, it cannot be called 'food in the ordinary sense,' but we thereby increase the working capabilities of the body and its capacity to resist exterior injurious influences, *i. e.*, to maintain health under unfavourable circumstances." Those constituents of the meat which are soluble in boiling water take no part in the formation and renovation of the muscular tissues, but by their effect on the nerves they exercise a most decided influence on the muscular work, wherein meat differs from all other animal and vegetable food. He therefore places extract of meat, and with it tea and coffee, under the head of "nervous food," in contradistinction to articles of "common food," which serve for the preservation of the temperature and restoration of the machine. Beef tea and extract of meat are of themselves incapable of supporting nutrition or maintaining life. Liebig, however, with justice, con-

demns the conclusions of those who, from comparative experiments on the nutritive value of fresh meat and meat-extract taken *per se*, argue that the latter is not only useless for purposes of nutrition, but positively injurious. It should be clearly understood that beef tea and extract of meat are only to be regarded in the light of auxiliaries to food, rather than independent articles of nutriment.—*London Med. Record*, April 16, 1873.

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Glycerined Vaccine Virus.—In an interesting communication to the *Wiener Med. Wochenschrift*, Nos. 6 and 7, Dr. Fleischmann, Physician to the Vienna General Polyklinik, gives an account of the various trials that have been made of glycerined vaccine virus since its employment was first recommended by Gehiem-Rath. Dr. Muller, of Berlin, now several years since. The general result of his investigation is highly favourable, and he thus sums up the conclusions which he has arrived at: 1st. Lymph mixed with glycerine will keep better and longer than heretofore. While his own experience has not gone beyond three months and a half, other practitioners have used it with success after seven or eight months or even after two years. 2d. As by this means the lymph can be multiplied within very broad limits, its utility, where large numbers have to be vaccinated, is very great. It dispenses with the necessity which otherwise may occur in urgent cases, of taking lymph from children whom we are uncertain about, or of taking it from revaccinated persons. 3d. As the necessary quantity of lymph is more easily obtained, it is not necessary to inquire into the condition of health of so many vaccinifers, whereby much time is saved. Suspected children also, as well as those for whom the parents object, need not be resorted to for supplies. 4th. The lymph can be sent to long distances without the same fear of the effects of weather as is felt with respect to undiluted lymph. 5th. The employment of vaccine crusts may be entirely dispensed with; Dr. Piffard, of New York, having found that on several occasions where these have been employed, contagious impetigo has complicated the vaccinia. 6th. If Bœck and Hunts's observations are confirmed—viz., that the contagion of syphilis loses its poisonous properties after remaining eight days in inclosed fluid—a further advantage attaches to the dilution of lymph with glycerine.

On the other hand, if the dilution be carried too far the number of punctures which prove successful will be diminished—say to one out of two. This, indeed, may be met by multiplying them. The maturity of the pustule also sometimes does not take place until the ninth or tenth day. Some practitioners pursue an improper practice of placing the lymph derived from various sources in the same bottle, so as to have it always ready. This evidently prevents all control over the source of the lymph, and increases any danger that may arise from accidental impurity.

Before using the lymph, care must be taken to intimately mix it by means of a hair-pencil; and for want of observing this precaution some practitioners have been disappointed, they having in fact only employed the lighter glycerine which remained at the surface. If it be desired to preserve it for future use, it is best to immediately fill capillary tubes with the fresh-mixed lymph and seal carefully with wax or sealing-wax. So secured, it will remain pure and active for a twelvemonth; but when the capillaries are badly secured, mouldiness is soon perceived.

The proportions ordered to be employed by the Prussian Government are—lymph one, glycerine two, and distilled water two parts, well mixed in a watch-glass.—*Med. Times and Gaz.*, March 29, 1873.

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Deaths from Chloroform.—An insane criminal (*Lancet*, May 24, 1873), aged 60, had chloroform administered prior to the introduction of a catheter. At first nothing abnormal occurred; the patient became insensible; but on the introduction of the catheter he struggled so that the inhaler was again applied. Seven minutes thereafter the pulse flickered and stopped. Restorative efforts were practised without effect.

A case of death through chloroform has

just occurred at Lille, and the man who administered it—a dentist without any sort of a degree—has been condemned for "involuntary homicide" to one month's imprisonment and a fine of twelve shillings, and about twenty pounds damages. —*Lancet*, May 17, 1873.

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Gratuitous Medical Advice.—Dr. WARDROP was in the habit for many years of giving advice to "poor people" at his house in Charles Street, St. James's Square, and was induced to discontinue the practice from the following circumstances: He had been called out one morning early to a patient in the neighbouring square. On returning home he saw alighting from a coroneted carriage a somewhat shabby old man, whom he recognized as one of his gratuitous morning patients. He made a detour, and returning inquired of the footman the name of his master, whom he ascertained to be the Earl of ——. When his turn came the pauper patient was ushered into the consulting-room of the great surgeon. Wardrop, in his blunt and decisive style, addressed the impostor by his name. The surprise of the latter may be conceived. Wardrop, who kept notes of all his cases, ascertained that he had been defrauded of somewhat about twenty guineas. This sum he demanded under a threat of exposure of the culprit, and was successful in obtaining it. We have heard Wardrop relate this anecdote, and describe in his graphic manner the miserable appearance that the old rogue presented. The circumstances detailed took so strong an effect upon Wardrop that he determined to discontinue a vicious system. Frauds of this description are so frequent since the establishment of proprietary special hospitals and dispensaries that surgeons in general practice, particularly in the metropolis, are robbed of a large portion of their income.—*Med. Times and Gaz.*, Dec. 21, 1872.

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Homœopathic Pilules.—The *Practitioner* (April, 1873) has recently analyzed some of the more commonly used homœopathic pilules of the "second dilution," purchased of two leading homœopathic pharmacists of London, with the following results:—

Sulphate of Copper Pills.—First sample, no copper could be detected in 100 pilules; second sample, no copper could be detected in 200 pilules. The quantity of sulphate of copper in the above pilules should have been 0.006 and 0.012 grain respectively. If even as little as 0.0001 grain of the sulphate had been present, it would have been detected.

Corrosive Sublimate Pilules.—It was just possible to detect mercury in 200 of the pilules. The amount was, however, less than corresponds to 0.0005 grain of corrosive sublimate, whereas 0 012 grain of this salt should have been present.

Nux Vomica Pilules, Belladonna Pilules.—No strychnia or atropia respectively could be detected, even when 300 pilules were employed. In the case of nux vomica, *e. g.*, 300 pilules should have contained about $\frac{1}{10000}$ grain of strychnia. Now, so small a quantity as $\frac{1}{70000}$ grain of strychnia is well known to give distinct reactions to chemical tests, but no reaction could be obtained in the present case.

So far, then, it would appear that we must place any cures following the use of pilules similar to the above to the credit of the imagination. The *Practitioner* promises to continue the subject on a future occasion, and the further results shall be laid before our readers.

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Imperial Gratitude.—Sir WM. GULL was waited upon on the 20th of May by Dr. Conneau and Dr. Baron Corvisart, who presented him, on the part of the Empress Eugénie, with a costly gold box bearing the Imperial cipher in diamonds. The box contained a pair of sleeve-links worn by the late Emperor.

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OBITUARY RECORD. — Died suddenly, June 2d, 1873, of cerebral hemorrhage, W. TYLER SMITH, M.D., the eminent consulting physician-accoucheur of St. Mary's Hospital, London. Dr. S. is favourably known by his able monographs on parturition and its processes, on the pathology and treatment of leucorrhœa, and his admirable manual of obstetrics.

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